

Docket No. F-8866

Ser. No. 10/554,037

REMARKS

Claims 11-28 are now pending in this application. Claims 1-10 are rejected and are cancelled herein. New claims 11-28 are added and are submitted to clarify the invention and to address matters of form that were not addressed by the Examiner and accordingly are considered unrelated to substantive patentability issues. The specification is amended to correct typographical and grammatical errors. No new matter is added.

CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 1-6 and 9-10 are rejected as obvious over the Morrow reference in view of the Yamawaki reference under 35 U.S.C. §103(a). Claim 7 is rejected as obvious over the Morrow reference in view of the Yamawaki reference and further in view of the Mitsuhiro reference under 35 U.S.C. §103(a). Claim 8 is rejected as obvious over the Morrow reference in view of the Yamawaki reference and further in view of the Yang reference under 35 U.S.C. §103(a). For a rejection under 35 U.S.C. §103(a) to be sustained, the differences between the features of the combined references and the present invention must be obvious to one skilled in the art.

Claims 1-10 are now cancelled rendering the rejections moot. However, insofar as the subject matter of new claims 11-28 reflects portions of the subject

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matter of the cancelled claims 1-10 and in the event the Examiner considers asserting the present rejection against the new claims or making the next Office Action final, applicants submit the following remarks.

NEW CLAIMS

Claims 11-28 are added and are submitted as patentable over the cited art of record. Independent claim 11 recites subject matter directed to configuration of the solar power generating modules which is not suggested by the applied references. In particular, claim 11 recites that the power generating modules each have:

said solar power generating granular cells physically arranged in a matrix having rows and columns wherein each of said solar power generating granular cells is disposed in both one of said rows and one of said columns;

said solar power generating granular cells in each of said rows being electrically connected in parallel with each other and one of said electric storage means;

said solar power generating granular cells in each of said columns being electrically connected in series, said columns having aligned first ends whereat ones of said positive output electrodes of ones of said solar power generating granular cells disposed at said first ends are disposed, and said columns having aligned second ends whereat ones of said negative output electrodes of ones of said solar power generating granular cells disposed at said second ends are disposed[.]

The above structure composes the power generating modules. Each of the power generating modules has a positive and negative module electrode connected to the

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positive and negative output electrodes of the cells at ends of the columns. The claim then goes on to state that the first and third switch means are used to connect the positive module electrodes and the negative module electrodes respectively to the positive and negative buses.

This combination of features is shown in Figs. 1 and 14-17 of the specification and is not suggested by the applied references. The matrix arrangement of the power generating granular cells wherein each row of the cells is electrically connected in parallel with an electric storage means and are later connected via switch means to buses is not taught by the applied references.

The Morrow reference shows a plurality of cells 12a-12c which may be selectively interconnected in various arrangements. The cells provided in the Morrow configuration are electrically connected via switches to output terminals 20 which correspond to negative and positive buses. Thus, the cells of Morrow do not correspond to the claimed granular cells which compose the claimed power generating modules of the present invention because it is the claimed power generating modules themselves that are connected via switches to buses. The capacitor, which the Examiner cites as a power storage means, is actually used in a filtering mode and is not connected in parallel to each row of cells as claimed because it is connected directly to the bus terminals 20 which are selectively connected via switches 14a and 14b. In the present claims the power storage

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means are claimed as one of the power storage means being connected in parallel to each of the plural rows. The ends of the columns are recited as being connected to the positive and negative modules electrodes. It is only these positive and negative module electrodes which are selectively connected to the positive and negative buses of the claims. Therefore, according to the presently claimed invention, the power storage means, one of which is connected in parallel with each row, are on the remote side of the first and third switch means from the positive and negative buses.

In contrast, the capacitor 16 of the Morrow reference is connected to the positive and negative buses and is not on the remote side of the switches from positive and negative buses. Since this teaches directly connecting the capacitor to the buses, the capacitor cannot correspond to the claimed power storage means since it is singular, on the wrong side of the switches, and therefore would not lead one to provide a power storage means for each row on the other side of the switches.

The Yamawaki reference has module units MN which are interconnected. Each of the module units MN include six modules M which may be connected in different arrangements as illustrated in Figs. 4-6. Fig. 4 shows a series connection while Figs. 5 and 6 show a parallel connections. These are connections of modules, not corresponding to the claimed granular cells, and do not illustrate the

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use of a matrix connection of granular cells wherein each row of cells has a power storage means electrically connected in parallel with the cells of the row. The Yamawaki reference does state that the individual modules M include a matrix of photovoltaic cells but does not provide any guidance that would lead one to include a power storage means in parallel with the cells of each respective row.

The Mitsubishi reference is cited for teaching granular cells. However, the Mitsubishi reference also fails to guide on to the above noted claimed invention.

Dependent claims 12-28 are patentable based on the subject matter recited therein in addition to the subject matter of claim 11.

The Examiner's attention is directed to the structure of claim 12 wherein a first and second substrate are recited as respectively having the power generating modules and the inverter circuit and control device mounted thereon. It is further recited that the electric storage means is disposed between the first and second substrate, and that the first and second substrates are embedded in a housing. It is respectfully submitted that this is not anticipated nor rendered obvious by the applied references.

Claim 20 further recites the fixed electrical connection of the rows and columns of the matrix structure of the power generating modules. Further, the module electrodes are recited as fixedly electrically connected to the ends of the columns while the power storage means are fixedly electrically connected to each

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In light of the foregoing, the application is now believed to be in proper form
for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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